

4. Issues of Sustainability

4.1. Social Issues

In the pursuit of producing a sustainable development this building concerns itself with not only appealing to the public sense of interest but also with aiding and enhancing the quality of life for locals in the immediate area. The suitability of this type of development has already been investigated; it further more aims to make a significant contribution to economic and social well-being of the community. It is proposed that the project will involve all design professions as a complete, collaborative effort. The proposed development will contain various areas of public access and use as well as the forging of new pedestrian routes.

4.1.1. Public Participation

For a project to succeed at this scale, public participation is integral. If this project is able to integrate the existing community into its operation as well as construction and implementation, it will succeed in affording itself sentimental value within the minds of the community and cementing its place in the community fabric of Salvokop. Much of the projects success depends on the community - of both Salvokop and the greater CBD - taking up an active role in the use of its facilities, since the facilities provide the means for personal education, development of musical skill and personal recreation. By thereby appealing to the community's sense of self development and drive for economic empowerment this facility can substantiate its existence and importance in the social landscape of the area.

The strategy for the building as a collection of its facilities results in a number of spaces that require specific climate control input at different times of the day. In the case of the office facilities, for example, these spaces shall be controlled on an individual level with the appropriate electronic assistance for this task. Thus for the most part, the building will simply provide the means for the users to determine the state of the environment in which they work.

4.1.2. Occupant Comfort

A high and highly specialised comfort is required in a building of this nature whereby large internal components have programmes such as auditoria and related performance and rehearsal, the likes of which require internal climates unattainable by passive techniques of construction. A HVAC system is therefore required to be introduced in order to accomplish the required thermal comfort levels during all seasons of the year. It is the intention of this design that the majority of public spaces within the interior be in the position to be maintained, with respect to thermal comfort as well as ventilation requirements, by passive systems. Generally speaking, the building envelope is engineered to be openable to a large degree so as not to obstruct the path of natural ventilation. Passive techniques to maintain these indoor public areas are unfortunately not foolproof. Therefore the HVAC system shall be extended to address and serve most areas, such as the foyer spaces, in cases whereby the state of outdoor conditions requires mechanical assistance of the internal microclimate.

Lighting is an important consideration in the all-hours use of the proposed development as this brief seeks to fulfil. Due to areas such as the exhibition spaces, rehearsal areas and indoor performance spaces, specific luminance levels are required at all times. Passive lighting alone cannot reach all of these areas, therefore lighting fixtures and their position are in somewhat responsive role to building conditions. These areas are therefore to receive the effects of heat gain through such lighting fixtures, and fall within the scope of internal areas to be in a position to receive mechanical cooling and ventilation assistance. Light penetration into auditoria and performance spaces must be diffused and controllable so as not to interfere with the proceedings and related projections. Night time lighting is planned to go far beyond requirements of health and safety so as to sufficiently promote evening events and establish uninhibited 24 hour use.

4.1.3. Accessible Environments

The main entrance has been positioned to make it immediately accessible from the public open spaces linked to the Ceremonial Way. The Centre is also directly accessible from parking located on basement level by means of lifts and stairs. The centre is designed to facilitate the free movement of persons with disabilities. By 'disabilities' it is meant any kind of debilitation that impedes the performance of a human being on a reasonable level without the benefit of external assistance. These disabilities therefore include:

- Paraplegic and quadriplegic people
- Blindness and partial blindness
- Deafness
- Mental disorders and incapacities

Each of these debilitations requires different approaches in design accommodations, but it should be understood that if the environment is appropriate, these disabilities may no longer be in a position to inhibit performance. Information technology and intelligent environments go a tremendous way in improving the standard of accessibility in buildings, allowing the individual user to manipulate the environment on a personal level. Therefore the environment no longer becomes accessible, but acts as an enabler for the individual to realise the potential within him/herself which has up until this been restricted.

A need to differentiate between public, personnel and performer access and circulation is required so as not to impede the activities of the Centre. Central and main access is available to all who desire to use it as already mentioned. Performers and staff are afforded opportunity to make use of private parking at basement level with direct access into the Centre within the Ancillary Spaces Zone. Service access is also required to be separate so as not cause disruption; the most appropriate location is directly accessible from the north via Ceremonial Way on the western perimeter of the building for deposit on basement level.

4.1.4. Health and Safety

The Centre for Performing Arts will form an important role in the matter of safety and security in the area with regards to a 24 hour street presence and issue of surveillance. The mixed-use nature of the building issues broad appeal at all times of the day and thus ensures its usage will extend into the night, guaranteeing public presence. Staff and authorised performers will be granted access at all times through the use of electronically monitored access control points. Access for the public with regards to the performance spaces will be monitored and controlled at the relevant lobby entrances to the spaces themselves, resulting in a general security presence at the main entrances. Entrances to the building are therefore restricted to the minimum, but of ample dimensions to cope with large quantities of people. The area is intended to be well lit at all times, keeping in mind comfort levels of the users and participants.

4.2. Economic Issues

4.2.1. Flagship Development and Marketability

In any project there are a number of principal elements in the forging of an appropriate marketing strategy. There is the project itself, in this case the flagship development of the Centre for the Performing Arts. There are three other elements: cost, people and marketing. The 'cost' concerns all financial matters and provides the means with which to undertake the flagship development. 'People' covers all contacts and personal matters. It is in people whom the skill are embodied. 'Marketing' covers all aspects of strategy, sales and public relations, or in simpler terms, the means for matching demand to the flagship development and the area to be regenerated (Smyth, 1994: 47).

In order to determine an appropriate marketing position the project must then be considered on two tiers. Firstly it is necessary to address the flagship as an entity in itself. Secondly it is necessary to consider the surrounding investment and consumption that is to be attracted. Finally a combination is required in the pursuit of the overall policy aim of urban regeneration. This combination makes its contribution towards the economic and social well-being of the area. Skill and resources will be primarily focussed on the development itself with the operational assumption that the investment and consumption will soon follow suit.

4.2.3. Repairs and Maintenance

Where accessibility is difficult, low maintenance materials have been designated for use in order to ensure that initial costs aren't unnecessarily multiplied in the coming future. Materials of this nature are mainly in the form of concrete and masonry brickwork. An abundant use of glass predominates many of the facades, and for purposes of maintenance and cleaning this glass specially coated and, where the glass is covered by external louvers for sun protection, these louvers will be constructed in such a way to facilitate ease of access to glass surfaces. In cases of material selection, it is felt that a higher initial cost to compensate for future ease of maintenance is an appropriate option for this project. Ease of access for maintenance is of utmost importance in order to preserve the integrity of

the building both on a structural level, and on a level of social perception.

4.2.3. Operational Costs

Operational costs are sought to be minimised through target usage of resources only where necessary. The nature of the Centre as a collection of its facilities is beneficial in the fact that its facilities may operate independent of each other. Thus energy expenditure may be economised.

The Centre is to be funded by the principal client in matters of Staff salary and maintenance issues, but a management system shall be implemented to involve the input and resources of constituent organisations of a non-governmental inclination. Through this involvement, special events may be organised in the aims of supplementary fund raising so as to ensure that improvements to the Centre may be instituted without economic shortfall.

4.3. Environmental Issues

4.3.1. Site

In the issue of the existing built context, it is imperative that the neighbouring buildings – especially the NZASM Heritage Housing Site – receive their full compliment of natural daylight without obstruction. Thus the height of the Centre is restricted in order not to create detrimental shading to the surrounding areas. Steps must also be taken to ensure that the Centre does not adversely affect the micro climate of the area through effects of wind-channelling and erosive water run-off. Most of the neighbouring buildings are yet to be designed and constructed, but all should seek to fall within the existing and proposed framework for the area.

The site at present is a natural landscape, of predominantly grassland characteristics. The development must not interfere with the existing ecosystem of its neighbouring green space – soon to be used as public green space. All trees are to be re-distributed within the site where their position conflicts with the proposed footprint of the Centre.

4.3.2. Waste

All sewerage will be distributed to the municipal connection, yet to be constructed in accordance with the Salvokop Redevelopment Framework. Municipal waste removal services shall be provided with the responsibility of removing regular waste – particularly the result of the integrated refreshment facilities and kitchen – where it is intended that it be recycled on a larger scale.

4.3.3. Water Use and Distribution

Water efficient devices are to be included in the specification of internal ablution facilities, as well as resourceful irrigation techniques practiced in the maintenance of the vegetative component of the outdoor spaces. Rainwater shall be stored where appropriate for future redistribution into these public soft-spaces.

All new planting shall be indigenous, minimising the water requirements and maintaining suitability to the climate of the region.

4.3.4. Energy

Energy expenditure is a primary concern in a building of this scale, both in the construction process and during operation. In order to keep energy the energy toll to a minimum, a balance in the selection of materials with respective low-embodied energy as well as materials of low maintenance requirements. Complex construction techniques, although unavoidable in many areas of the build, should be kept to minimum where possible. These construction techniques may further prove useful in the scope of skills development and local labour involvement. Locally available materials will gain preference in selection so as to minimise embodied energy in transport requirements.

The dominant expenditure of energy will be directed o maintenance of internal occupant comfort, e.g. the HVAC system and lighting. While energy expenditure with respect to these systems is inevitable, measures can be taken to significantly reduce the levels of energy expenditure. By monitoring each zone within the building and modifying the environmental circumstances accordingly, unnecessary expenditure of energy can be avoided. A Building Automated System is to be implemented, as this will calculate the relevant and suitable microclimate conditions as detected from internal sensors. By integrating mechanical and passive systems for ventilation and lighting, the mechanical systems can be in the position to be implemented in public spaces only when required on certain occasions.